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AUTHOR	Niedermeyer, Fred C.
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ABSTRACT

The effects of parent-monitored practice at home on pupil performance in reading were investigated. The study used as instructional vehicles the Parent-Assisted Learning Program (PAL) and the Southwest Regional Laboratory's (SWRL) First-Year Communication Skills Program. PAL was designed to enable school personnel to establish a system whereby parents effectively instruct their primary-grade children in basic skills at home. Programed materials, called Practice Exercises, and carefully prescribed training procedures were developed to be used by parents or other nonprofessionals. The results of a study made in three kindergarten classes indicated that the PAL and Communication Skills Program elicited high levels of parent participation and pupil learning. References are included. (Author/NH)

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Parent-Assisted Learning

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PARENT-ASSISTED LEARNING

Fred C. Niedermeyer

Parents are a powerful resource for increasing children's academic achievement. Several recent studies have demonstrated that parents can cooperate with teachers and help their children learn by providing school-related instruction at home (Brzeinski, 1964; Della-Piana, Stahmann, & Allen, 1966; Hayman, Johnson, & Mayers, 1964; Karnes, 1967; MacLaren 1965; Perlish, 1968; Regal & Rizer, 1966; Tannenbaum, 1967; Wade, 1967).

In this study, the effect of parent-monitored practice at home on pupil performance in reading was investigated. The study used as instructional vehicles a Parent-Assisted Learning Program (PAL) and the Southwest Regional Laboratory's (SWRL) First-Year Communication Skills Program.

Aside from pupil performance, a desired outcome in parent-assisted learning is the continued parent participation beyond a very short time period. While it is one thing to develop effective instructional materials and related training for parents, it may be quite another to keep these parents participating over an extended period of time.

Several studies (Della-Piana, et al., 1966; Karnes, 1967; Robinson & Pettit, 1966) have reported parent dropout rates of 35 percent and higher over periods as short as 3 months. Since a continuing high level of parent interest and involvement seems critical for program success, two conditions designed to insure maximum parent participation were manipulated in this study: (1) school-to-home feedback (parents received weekly teacher comments and/or pupil test scores), and (2) parent accountability (records of completed home instruction were returned to school daily).

While pupil reading performance in the Communication Skills Program constituted the primary dependent variable in the study, two other dependent measures were obtained with respect to school-to-home feedback and parent accountability. The amount of parent participation was measured by parent estimates of the number of completed practice sessions, and pupil attitude was measured by an activity preference form.

DEVELOPMENT OF THE PAL PROGRAM

PAL was designed to enable school personnel to establish a system whereby parents effectively instruct their primary grade children in basic skills at home. PAL was formulated according to the following rationale:

1. Instructional outcomes must be specified in terms of pupil behaviors.

2. When the tasks to be learned are stimulus-response associations and multiple discriminations (such as those required in learning to read), then non-professionals (e.g., parents) in a tutorial mode can help maintain and strengthen these responses by monitoring practice responses.

3. To insure successful instructional interaction between parent and child, parents must be trained to perform important instructional tasks such as confirming correct responses and administering positive reinforcement. This training must include opportunities for practicing such skills.

4. Instructional materials to be used by parents with their children must be highly structured and tied directly to specified pupil behaviors.

5. There must be an efficient system of prescribing and packaging instructional materials for use by parents in the home.

The program resulting from this rationale is described briefly in the following sections.[1]

INSTRUCTIONAL MATERIALS FOR PARENT USE

Programmed materials, called Practice Exercises, were developed to be used by parents or other nonprofessionals. Each exercise provided practice on one of the four objectives of the reading program--words, beginning sounds, ending sounds, and blends. (See Figure 1 for a sample page of a Practice Exercise on blends.) A Practice Exercise contains 20 items that require the pupil to select or construct a response to a printed stimulus. Verbal directions are given by the parent who reads a script printed on the exercise itself. For each of the 10 program units during the year, there are 8 Practice Exercises. These materials were demonstrated to be effective through a program in which trained fifth- and sixth-grade students served as classroom tutors (see Niedermeyer and Ellis, 1969).

In addition to the Practice Exercises, inexpensive storybooks were sent home frequently (about two per week). These were designed to be enjoyed by the pupil as well as to provide additional practice in reading program words. Whereas Practice Exercises were specifically prescribed for parent-child use, storybooks were used at the option of the parent.

INITIATING PARENT PARTICIPATION

To participate in the PAL program (i.e., have Practice Exercises sent home by the kindergarten teacher), parents were required to attend a 90-minute training session at the school. About a week before the scheduled training session, a letter of invitation from the principal was sent to the parents of 89 kindergarten children in three classrooms at the experimental school.

Three devices were employed to insure high attendance at the training session. First, a parent could attend either a late afternoon session or an evening session. Second, free babysitting and movies were provided at the school during each session. Third, parents were asked to return a form to the principal signifying whether they would attend one of the training sessions. (The term "orientation session," rather than training session, was used with parents.)

A turnout of 91 parents, including 20 fathers, resulted. These parents represented 74 of the 89 kindergarten pupils (83%).

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[1]For a more complete description of the program see Niedermeyer (1969).

PRACTICE EXERCISE 4a UNIT 6 BLENDS		
Row 1. Sound out this word. (rr-an) Read the word. (ran)	1	ran
Row 2. Point to the word that sounds out rr-at. (rat) Read the word. (rat)	2	mat rat run
Row 3. Sound out this word. (nnn-ell) Now, read the word. (nell)	3	Nell
Row 4. Sound out this word and then read the word. (rr-un. run)	4	Run

Figure 1
Page from a Practice Exercise

PARENT TRAINING

The objectives of the parent training stated how the parent was expected to behave when conducting a Practice Exercise session with his child at home. Most of the prescribed parent behaviors are shown in Figure 2, one of the handouts given parents at the Orientation Session. Other training objectives dealt with contingency management procedures to be employed by parents.

The training sessions were conducted by the school principal, the three kindergarten teachers, and the experimenter. At a training session, parents participated in structured role playing where they practiced the procedures prescribed in the handouts.

PROGRAM OPERATING PROCEDURES

PAL was designed to provide classroom related practice at home for all students. It was also designed to provide remedial practice for those who needed it. These goals were accomplished by integrating the home instruction program with each 3-week teaching unit conducted by the teachers in the three classrooms. The following is a description of the 3-week home instruction cycle used during four classroom teaching units (12 school-weeks). These procedures applied to all PAL pupils regardless of the parent's assignment to school-to-home feedback and/or parent accountability treatment groups.

First week: A set of four Practice Exercises was sent home via the child to all participating parents. The exercises each week were selected to coincide with the on-going classroom instruction.

Second week: Four more Practice Exercises were sent home on Monday. On Friday, as a normal part of the program, the teachers administered a selected response criterion test designed to indicate learner attainment on each of the four objectives for the 3-week teaching unit.

Third week: The classroom teachers began the next 3-week teaching unit. Additional Practice Exercises on the last unit and/or review exercises from earlier units were sent home on Monday.

EXPERIMENTAL PROCEDURES

The experimental phase of the investigation took place during the second semester of the 1968-1969 school year. The first set of four Practice Exercises was sent home, following parent training, early in February. During the next 12 school weeks, while the teachers covered four of the 3-week units in the reading program, PAL parents received a total of 48 Practice Exercises. Thus, any child whose parents monitored the 40 required responses on each Practice Exercise made 1,920 (40 x 48)

GUIDELINES FOR CONDUCTING PRACTICE SESSIONS

1. **WHAT DO I DO BEFORE STARTING THE PRACTICE SESSION WITH MY CHILD?**

   - Be objective and natural. Behave as if it were someone else's child. Smile! Avoid sarcasm or criticism at all costs.
   - Select one of the four weekly Practice Exercises and place it directly in front of your child. Allow him to hold it and turn the pages at your direction.
   - Be positive. Say something like,

     "You've been doing very well in your reading, Johnny. Today we're going to practice some new sounds."

2. **DURING THE PRACTICE SESSION, WHAT DO I DO WHEN MY CHILD GIVES A RIGHT ANSWER?**

   - Let him know he is right. Use clear phrases like,

     "That's right."
     "Very good."
     "O.K."

     Do this right away and do it every time.

3. **WHEN DO I PRAISE MY CHILD?**

   - At least once after every three or four correct answers, do more than simply let your child know he is right. Praise him and tell him he is doing very well. Say it in different ways and show him you are pleased. For example,

     "Gee, you're doing a good job tonight!"
     "Very, VERY good Tommy! That was a hard one."

4. **WHAT DO I DO WHEN MY CHILD GIVES A WRONG ANSWER OR CANNOT ANSWER AT ALL?**

   - Tell him the correct answer, then have him do it right before going on. Say something like,

     "Look at the word, Jimmy. It is with. What is the word?"

     For a "Point to . . ." question, say,

     "That word is fell. This word is will. Now, Sally, you point to the word will."

   - Do not spend time giving hints or prompts. Also, do not say things like, "No, that's wrong," or in any other way make him feel unhappy about not knowing the answer.

Figure 2

5. **HOW FREQUENT AND HOW LONG SHOULD THE PRACTICE SESSIONS BE?**

- **Schedule a regular 15-minute session four times a week.**
- **Use only <u>one</u> Practice Exercise at each session.**
- **Require <u>two</u>, and only two, trials through a Practice Exercise.**
- **Do not exceed a total of <u>15 minutes</u> for the two trials. (Follow-up Activities may, of course, go beyond this limit.)**
- **Have only <u>four</u> sessions a week.**

Figure 2 continued

practice responses that he would not have made otherwise. Following completion of Unit 8 in early May, the data were collected.

SUBJECTS

The SWRL First-Year Communication Skills Program was tried out at eight schools in a district adjacent to Los Angeles during 1968-69. In December, the district supervisor in charge of the tryout was asked to find a suitable school for the PAL experiment. Four schools were eliminated immediately because they were already using a student tutorial program involving the same materials (Practice Exercises) to be used by parents. Another school was eliminated because the teachers, on their own initiative, had already been sending Practice Exercises home to parents. (No procedural information, however, had been given to these parents.)

The principal of one of the remaining three schools agreed to cooperate in the experiment. The other two schools served as comparison populations. All three schools were located within 2 miles of each other and served lower middle class white families. There were three kindergarten classes at each of the three schools.

COMPARISON GROUPS

Two comparison groups were available from the two other schools initially considered for the PAL program. Both schools contained three classes using the same SWRL reading program.

Comparison Group I. In one of the three kindergarten classes at each of these two schools, a Parent Survey Form had been sent home in early January as part of SWRL's evaluation procedures for the First-Year Communication Skills Program. One of the items on the questionnaire asked parents to state whether they would attend a training session if their school were to have a parent-assisted learning program. Questionnaires were returned by parents of 54 of the 62 children from these two classes. Parents of 8 of these 54 children indicated they would not attend such a meeting. The remaining 46 pupils served as Comparison Group I. Prior to the start of PAL in February an Initial Achievement Test over the first four units of instruction was given to these pupils and those in the PAL school. The scores on this test then served as a concomitant variable when comparing the reading posttest performance of Comparison Group I with that of the PAL pupils. Analysis of covariance was used since random assignment to parent and non-parent conditions was impossible.

Comparison Group II. In each of the six classes at the two comparison schools, initial achievement test scores were available for 8 randomly selected pupils. These 48 pupils (8 pupils x 6 classes) served

as Comparison Group II with the initial achievement test scores again serving as a concomitant variable when comparing this group with the PAL group.

While Comparison Group I was designed to provide a fairer comparison by eliminating those parents who probably would not have participated in a PAL program, Comparison Group II was designed to sample a wider range of comparable classrooms (6 vs. 2).

DESCRIPTION OF FEEDBACK AND ACCOUNTABILITY TREATMENTS

The following paragraphs describe the school-to-home feedback and parent accountability treatments designed to insure a constant, high level of participation from PAL parents.

School-to-Home Feedback. Parents under school-to-home feedback conditions received weekly information on the effect the work at home was having on their child's performance at school. This feedback consisted of test information and/or comments from the teacher. Feedback was designed to be a systematic reinforcer for the participating parent.

Parent Accountability. All participating parents received Record Cards (Figure 3) with which to keep track of pupil responses and establish contingent follow-up activities during a home practice session. Parents under the accountability condition, however, received Special Record Cards which carried directions to the parent to signify completion of the Exercise (by signing his name) and to send the card back to the teacher via the child (Figure 4). Gold stars were awarded for each signed record card returned by accountability pupils. Special "Good Work" badges were given every three weeks to those accountability pupils who had returned all 12 cards for a unit.

DESIGN FOR TESTING EFFECTS OF FEEDBACK AND ACCOUNTABILITY

To test the effects of parent accountability and school-to-home feedback on kindergarten reading performance, maintaining parent participation, and pupil attitude, a posttest-only experimental design (Campbell & Stanley, 1963) was employed with treatment groups controlling for each other. Feedback and accountability were crossed to form four treatments: Feedback Only (FO), Accountability Only (AO), Feedback and Accountability (F&A), and Neither Feedback Nor Accountability (NFNA). A blocking factor, initial student achievement level [high (HA) and low (LA) as measured by a test on pre-Christmas reading instruction] was added to form a 2 x 2 x 2 (treatment x treatment x blocks) factorial design with eight cells. Each parent-child pair comprised one unit for data analysis of the dependent measures.

Treatment assigment. After parent training, 72 subjects were divided at the median score on the initial achievement test (59%),

RECORD CARD

PRACTICE EXERCISE: ___ UNIT: ___

MARKING KEY:

✓ = right O = not right

TRIAL ONE

Page: 1	2	3	4	5
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4

TRIAL TWO

Page: 1	2	3	4	5
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4

Figure 3
Parent Record Card

RECORD CARD

PRACTICE EXERCISE: ___ UNIT: ___

MARKING KEY:

✓ = right O = not right

TRIAL ONE

Page: 1	2	3	4	5
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4

TRIAL TWO

Page: 1	2	3	4	5
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4

Dear Parent,

When your child has completed the Practice Exercise indicated on the front of this card, please sign below and have your child return the card to school. Thank you.

(Parent Signature or Initials)

(Date Exercise Completed)

Figure 4
Special Record Card for Accountability Parents

thus forming the HA and LA groups. To control for classroom differences, the blocking was performed within classes. Thus, when assigning to treatment groups within each of the two achievement levels in each of the three classrooms, approximately one-fourth of the pupils were randomly assigned to each of the four treatment conditions.

DEPENDENT MEASURES

Pupil reading performance. A 50-item constructed response posttest was generated by randomly sampling words, beginning sounds, ending sounds, and blends from the program content. The test was administered individually at the experimental school and at the comparison schools by a team of three SWRL staff members who had no knowledge of treatment group assignments at the experimental school. Testing took place within 2 weeks after each teacher had completed instruction on Unit 8.

Amount of parent participation. About one week after the reading posttest was given, a Parent Questionnaire was sent home (via the pupils) to each PAL parent. (See Appendix A for responses to the items in the Questionnaire.) While the questionnaire contained many items related to revision of the basic parent participation program, one of the items was designed to be relevant to the experimental variables--feedback and accountability. In this item, parents were asked to estimate how many of the 48 Practice Exercises had actually been completed.

Pupil attitude. To determine whether the various treatment conditions resulted in differences in pupil attitudes toward home instruction, an Activity Preference Form (APF) was developed. The APF consisted of five pictures paired in all possible ways to make a total of 10 pairs. One of the pictures showed a child working a Practice Exercise at home with his parent. This and the other pictures are contained in Appendix B. For each of the 10 picture-pairs comprising the APF, the student, after having the two pictures described to him, was required to mark the bubble by the picture he "would like to be in the most." The APF was administered to parent participation children by a SWRL staff member to groups of four boys or four girls selected in a random order from the master class lists. It was scored by counting the number of times (0, 1, 2, 3, or 4) each student selected the parent-Practice Exercise picture when it was paired with each of the remaining four pictures.

RESULTS

Pupil reading performance

Table I contains the mean reading scores on both tests of all 68 PAL pupils, Comparison Group I, Comparison Group II, and 14 nonparticipating pupils in the PAL school. It can be seen that the posttest average for the PAL pupils was 83%, whereas the posttest averages for Comparison Groups I and II were 55% and 50%, respectively. The results of the analysis of covariance, as presented in Table II, indicated a significant treatment effect ($F=39.61$, $p < .01$).

It is also useful to compare these groups in terms of an 80% criterion level as shown in Table III from a criterion-referenced viewpoint. It can be seen that 66% of the PAL pupils scored at or above this criterion on the reading posttest. In Comparison Groups I and II only 15% and 19%, respectively, scored at or above the 80% criterion on the posttest.

The mean scores of all school-to-home feedback and parent accountability treatment groups with the PAL program are shown in Table IV. Pupils in all treatment groups displayed high levels of mastery on the posttest. The combined average for all groups on the posttest was 83%.

From Table IV, it can also be seen that posttest averages increased when accountability and feedback conditions were present. HA and LA groups not under accountability and feedback conditions (NANF) averaged 89% and 72%, respectively, while HA and LA groups under both accountability and feedback conditions (A&F) averaged 96% and 75%, respectively. These differences, however, are small. As shown in Table V, the analysis of variance found no significant main effects or interactions for feedback and accountability treatments in the reading performance data. Only the blocking factor, initial reading achievement level, had a significant F value.

Amount of parent participation

To learn how much parent participation took place in the homes, parents were asked to estimate how many of the 48 Practice Exercises received over the 12-week period had actually been completed. The means of these estimates for each parent treatment group, as shown in Table VI, ranged from a low of 41.29 (86% of the total of 48 Practice Exercises) to a high of 48.00 (100%). The total average estimate of completed Practice Exercises for all parents was a surprisingly high 44.52 (92%). Since even control group parents (NFNA) approached maximum participation, the analysis of variance for these data, as shown in Table VII, failed to find significant differences among the means.

TABLE I

Mean Scores on the 30-Item Initial Reading Test and the 50-Item Reading Posttest for PAL Pupils and the Comparison Groups

Group	n	30-Item Initial Test		50-Item Posttest	
		$\bar{X}$	S.D.	$\bar{X}$	S.D.
All PAL Pupils	68	17.79 (59%)	6.15	41.47 (83%)	8.87
Comparison Group I	39	14.82 (49%)	6.44	27.46 (55%)	12.63
Comparison Group II	41	15.59 (52%)	7.75	25.00 (50%)	15.75
Nonparticipation Pupils in PAL School	14	16.14 (54%)	7.48	29.86 (60%)	16.24

TABLE II

Analysis of Covariance of Reading Posttest Scores for PAL Pupils, Comparison Group I, and Comparison Group II, Using Initial Reading Test Scores as the Concomitant Variable

Source of Variation	SS (adj.)	df	MS	F
Between groups	5,197.76	2	2,598.88	39.61*
Within groups	9,448.43	144	65.61	
Total	14,646.19	146		

*$p < .01$

TABLE III

Number of Pupils in PAL, Comparison Group I, and Comparison Group II Scoring Above and Below 80% Criterion on Initial Test and Posttest

INITIAL TEST

	PAL	Comparison Group I	Comparison Group II
Pupils > 80%	14 (21%)	3 (8%)	6 (15%)
Pupils < 80%	54 (79%)	36 (92%)	35 (85%)

POSTTEST

	PAL	Comparison Group I	Comparison Group II
Pupils > 80%	45 (66%)	6 (15%)	8 (19%)
Pupils < 80%	23 (34%)	33 (85%)	33 (81%)

TABLE IV

Mean Scores on the 30-Item Initial Reading Test and the 50-Item Reading Posttest for PAL Treatment Groups

Treatment Group	n	30-Item Initial Test Mean	30-Item Initial Test S.D.	50-Item Posttest Mean	50-Item Posttest S.D.
F&A HA	8	22.07 (76%)	4.17	48.12 (96%)	1.88
F&A LA	8	12.63 (42%)	2.11	37.25 (75%)	9.66
AO HA	9	22.65 (75%)	3.21	47.78 (95%)	2.33
AO LA	9	13.00 (43%)	4.36	35.11 (70%)	11.16
FO HA	9	22.33 (74%)	3.25	46.44 (93%)	3.97
FO LA	7	12.43 (41%)	3.46	35.43 (71%)	8.83
NFNA HA	9	22.89 (76%)	3.95	44.44 (89%)	4.72
NFNA LA	9	12.44 (41%)	3.97	36.11 (72%)	9.68
ALL GROUPS	68	17.79 (59%)	6.15	41.47 (83%)	8.87

TABLE V

Analysis of Variance of Reading Posttest Scores for PAL Treatment Variables

Source of Variation	SS	df	MS	F
F (school-to-home feedback)	1.81	1	1.81	< 1
A (parent accountability)	4.26	1	4.26	< 1
I (initial achievement level blocking factor)	229.94	1	229.94	35.93*
FA	0.17	1	0.17	< 1
FI	0.10	1	0.10	< 1
AI	2.20	1	2.20	< 1
FAI	2.50	1	2.50	< 1
S/FAI (adjusted for unequal n)	384.09	60	6.40	

*p < .01

TABLE VI

Mean Estimates of Number of Completed Practice Exercises (out of 48) by Parents in PAL Treatment Groups

Treatment Group		n	Mean	S.D.
F&A	HA	9	48.00 (100%)	0.00
F&A	LA	7	47.00 (97%)	1.73
AO	HA	9	45.22 (94%)	7.24
AO	LA	9	43.00 (89%)	12.43
FO	HA	7	44.57 (92%)	5.16
FO	LA	7	41.57 (86%)	8.58
NFNA	HA	7	41.29 (86%)	11.25
NFNA	LA	9	44.67 (93%)	6.17
TOTAL		64	44.52 (92%)	7.61

TABLE VII

Analysis of Variance of Parents' Estimates of the Number of Completed Practice Exercises for PAL Treatment Variables

Source of variation	SS	df	MS	F
F	6.07	1	6.07	< 1
A	15.48	1	15.48	2.16*
I	1.01	1	1.01	< 1
FA	5.43	1	5.43	< 1
FI	3.33	1	3.33	< 1
AI	1.62	1	1.62	< 1
FAI	7.23	1	7.23	< 1
S/FAI (adjusted for unequal means)	402.01	56	7.18	

*n.s.

A post hoc analysis of parent estimates of participation revealed an effect for the parent accountability treatment. After a criterion of completion for assigned Practice Exercises was established at 90%, parent estimates above and below this criterion for accountability and non-accountability parents formed a 2 x 2 contingency table as shown in Table VIII. It can be seen that, whereas 32 out of 34 (94%) of the accountability parents participated above the 90% criterion, only 21 out of 30 (70%) of the non-accountability parents participated above this level. A chi square test of independence was applied to these data. The resulting X^2 was 6.50 (df=1), and was significant at the .02 level of confidence. This difference in the amount of participation between accountability parents may have been enough to account for the slight trend in pupil posttest scores favoring accountability treatments (see Table IV).

It is possible, of course, that parents grossly overestimated their participation. Two factors, however, indicate that this did not happen. First, the high scores on the reading posttest suggest that the parent estimates are valid. Second, the 34 parents under accountability conditions (A&F and AO) returned signed Record Cards to school for each completed Practice Exercise. Accountability parents estimated an average of 45.8 (95%) completed Practice Exercises. It was found that this estimate was almost identical to the average number actually turned in by these same parents (45.40, 95%).

PUPIL ATTITUDE

The means for the different parent treatment groups on the Activity Preference Form (APF), as shown in Table IX, were very similar. Pupils selected the parent-Practice Exercise sketch 56% of the time. As can be seen in Table X, there were no significant main effects or interactions resulting from feedback and accountability treatments.

When the total number of preferences for each of the five activities was examined, it was interesting to note that, as shown in Table XI, the parent-Practice Exercise sketch was ranked first and a parent-storybook sketch was ranked second. In other words, pupils ranked reading with the parent above watching television and engaging in school instructional activities.

Table XII presents a breakout, by sex, of pupil preferences to all 10 contrasts in the APF. There is an interesting interaction between reading activities with the parent and instructional activities with the teacher. When watching television was contrasted with instruction at school (APF pages 1 and 5), watching television was strongly preferred. When watching television was contrasted with reading at home, however (pages 6 and 7), reading at home was always preferred. On the other hand, when reading storybooks with the teacher was contrasted with either of the home-reading sketches (pages 2 and 9), reading with the teacher was preferred by boys (girls were evenly divided).

TABLE VIII

Contingency Table Showing Relation Between Parent Accountability Treatment and Amount of Parent Participation Falling Above and Below a 90% Criterion

	Accountability	Nonaccountability	Total
Number of Parents above 90% Participation Level	32	21	53
Number of Parents below 90% Participation Level	2	9	11
Total	34	30	64

$X^2 = 6.50$, df = 1, p = .02

TABLE IX

Mean Scores on Activity Preference Form by Pupils in PAL Treatment Groups

Treatment Group		n	Mean	S.D.
F&A	HA	8	2.63	1.69
F&A	LA	6	2.50	1.22
AO	HA	9	2.00	0.68
AO	LA	8	1.87	1.16
FO	HA	9	1.78	1.32
FO	LA	8	2.75	1.36
NFNA	HA	8	2.25	1.49
NFNA	LA	8	2.20	1.39
All Groups		64	2.23 (56%)	1.56

TABLE X

Analysis of Variance (Method of Unweighted Means) of

Activity Preference Forms Scores for Parent

PAL Treatment Variables

Source of Variation	SS	df	MS	F
F (school-to-home feedback)	.20	1	.20	<1
A (parent accountability)	.00	1	.00	<1
I (initial, pre-parent achievement level)	.07	1	.07	<1
FA	.19	1	.19	<1
FI	.12	1	.12	<1
AI	.19	1	.19	<1
FAI	.12	1	.12	<1
S/FAI (adjusted for unequal n)	12.23	56	.22	
				All F values: n.s.

TABLE XI

Ranking of the Five Activity-Sketches in the Activity Preference Form According to the Number of First Choices Received by Each Sketch

Activity-Sketch	Number of First Choices	Percent of First Choices
1. Parent-Practice Exercise	145	56%
2. Parent-storybook	142	55%
3. Watching television	137	53%
4. Teacher-storybook	132	51%
5. Teacher-number flashcard	94	36%

TABLE XII

Pupil Preferences on Each of the 10 Possible Contrasts of the Five Activity Sketches in the Activity Preference Form

Page in Activity Preference Form	Activity Pictures for Pupil Preference Choice	Preferences		
		Boys	Girls	Both
1.	Watching Television	28	19	47
	Teacher-Number Flashcard	9	9	18
2.	Teacher-Storybook	23	14	37
	Parent-Practice Exercise	14	14	28
3.	Teacher-Number Flashcard	12	9	21
	Parent-Storybook	25	19	44
4.	Teacher-Number Flashcard	15	15	30
	Teacher-Storybook	22	13	35
5.	Watching Television	28	14	42
	Teacher-Storybook	9	14	23
6.	Parent-Practice Exercise	22	20	42
	Watching Television	15	8	23
7.	Parent-Storybook	24	16	40
	Watching Television	13	12	25
8.	Parent-Storybook	18	12	30
	Parent-Practice Exercise	19	16	35
9.	Teacher-Storybook	23	14	37
	Parent-Storybook	14	14	28
10.	Teacher-Number Flashcard	10	15	25
	Parent-Practice Exercise	27	13	40

DISCUSSION

The study indicates that a carefully developed program of school-related home instruction can elicit high levels of parent participation and pupil learning. That substantial learning can result from parent participation is consistent with several other studies in which the home instructional program is tied to clearly specified, measurable objectives (Brzeinski, 1964; McManus, 1964; Perlish, 1968; Wade, 1967).

Children in the PAL program, regardless of feedback and accountability treatment, averaged 83% on the reading achievement posttest covering the 12 weeks of classroom instruction and parent participation. These same children had averaged only 59% on the initial reading achievement test covering classroom instruction that took place prior to the start of parent participation. Two comparison groups from other schools using the same classroom reading program averaged between 50 and 60% on both achievement tests.

Non-participants at the PAL school. In the PAL classes the parents of 14 children did not attend the Orientation Session. These children and their parents, then, did not receive Practice Exercises each week from the teachers. It is interesting to note that the initial achievement level of these 14 pupils (54%) was similar to that of the 68 PAL pupils (59%). Thus, children whose parents did not volunteer to participate were not necessarily the low achievers, as might be expected. But the posttest average of these 14 pupils, who received the same classroom instruction as the PAL pupils, was only 60%.

Feedback and Accountability

Significant differences between school-to-home feedback and parent accountability treatment groups were not found with respect to any of the three dependent measures. The high level of parent participation in all treatment groups precluded the identification of differences. Since the participation level of control parents not under feedback and accountability conditions was above 90% (Table VI), judgment concerning the effectiveness of these two treatment variables must be withheld.

The low level of parent participation evident in previous studies (Della-Piana, 1966; Hayman, et al., 1964; Karnes, 1967; Robinson & Pettit, 1966) simply did not occur in the present study. Treatment variables designed to maintain a high level of parent participation were not needed. Had control groups (neither feedback nor accountability) exhibited low levels of participation and learning, then more definitive judgments could have been made concerning the effectiveness of school-to-home feedback and parent accountability in increasing pupil learning through maintaining a constant, high level of parent participation. As it was, high levels of learning and participation were obtained from all treatment groups in the parent program.

Parent accountability. As indicated previously, a post hoc analysis revealed an effect for the parent accountability treatment on the amount of parent participation. Parents under accountability conditions surpassed the 90% criterion of participation in significantly larger numbers than parents not under parent accountability conditions. Thus, it would seem that parent accountability may be a treatment variable worth testing in other parent-assisted learning situations. Perhaps over an entire school year the parent participation and pupil learning trends favoring the accountability condition in this study would have continued. At other grade levels, in other subject areas, with other socioeconomic and/or ethnic populations, and over longer periods of time, parent accountability may prove to be a valuable treatment condition for insuring high parent participation and pupil learning.

School-to-home feedback. Contrary to the parent accountability treatment, no post hoc effects, or even slight trends, were evident in the data for school-to-home feedback. Even in the open-ended items on the Parent Questionnaire (Appendix B), not one feedback parent mentioned receiving pupil performance data and/or comments from school each week. One possible explanation for the apparent ineffectiveness of this treatment is that parents received performance feedback of a much more immediate and powerful nature every day during the sessions with the children. By using the Record Cards to record correct and incorrect responses during a practice session, the parent could easily see at what level the pupil was performing and whether he was making improvement. On the Parent Questionnaire, 62 out of 64 parents (97%) indicated that they used the Record Card at every session. Analysis of the Record Cards turned in by accountability parents (half of whom were also under feedback conditions) showed that the children improved during a session or else performed above the 80% criterion level more than 97% of the time. Thus, parents were almost always seeing their children improve or perform well, and this may have been incentive enough to insure a high level of participation. The weekly feedback from the teacher perhaps was unnecessary.

SPECIFIC PROGRAM FEATURES

Since the PAL program was effective even without the presence of feedback and accountability treatments, what features of the basic program may account for the high levels of learning and participation? The following paragraphs describe various aspects of the program and its implementation which seem relevant to the question.

Objectives-based instruction. The reading program was developed to promote very specific reading skills: reading sight words, reading beginning and ending sounds, and blending sounds in order to sound out new words. Parents were made cognizant of these objectives both during the training session and through the training materials they received. Thus, parents may have been prevented from attempting to elicit irrelevant or overly difficult responses.

Programmed Materials. The Practice Exercises used by parents with their children provided direct practice on the objectives of the reading program. These exercises were highly programmed in that the visual stimuli, the sequence of stimuli, the verbal directions, and the number of practice responses were predetermined and structured for the parent.

Specific Parent Training. The 90-minute training session attended by parents was directed totally at what parents should do when working at home with their children. They were told how to use the Practice Exercises and respond appropriately to the children. They were also given strict guidelines as to the length and frequency of home practice sessions. Parents also practiced instructional procedures in a structured role-playing situation in which they received immediate feedback as to the adequacy of their behaviors.

Contingency Management Procedures. During training, parents were told how to establish and manage positive consequences contingent upon criterion performance by their children during home practice sessions. They were given several examples of appropriate consequences ("Follow-up Activities"). Record Cards were provided to enable them to record correct and incorrect responses during a session and thus obtain a concrete basis for managing the positive consequences.

Classroom Program Generating Positive Parent Attitude. When parents were asked to participate in the reading program in January, their children had already been receiving teacher instruction since October. They had heard their children read from storybooks brought home from school each week, and their attitude toward the kindergarten reading program was favorable. A district-wide parent survey in early January had shown that 94% of the parents felt it was appropriate to teach reading at the kindergarten level. During this same survey, 81% of the parents stated that they would participate in a home program even if it required attendance at a meeting in the school. Had there not been cues to the parents beforehand that the school program was fairly successful, it is debatable whether the initial turn-out of parents and the subsequent level of participation would have been as high.

It was also determined that parent attitude during the PAL program remained highly positive. One of the items in the Parent Questionnaire (Item 9, Appendix B), sent to all participating parents after 12 weeks of home instruction, asked parents to indicate the extent to which they felt they could maintain participation over an entire school year. From the 64 parents returning the questionnaire, the following distribution was obtained: 37 parents (67%) stated they definitely could maintain participation over an entire school year, 19 (30%) indicated they probably could, and only 2 (3%) felt they could not. Thus, 97% of the parents indicated a definite or probable willingness to participate in the program over an entire school year.

In summary, the PAL contains certain features which may account for its success: objectives-based instruction, programmed materials, short but specific parent training, contingency management procedures, and a classroom program that generated positive parent attitudes. When school-related parent instructional programs include these features, treatment variables designed to maintain high levels of parent participation and pupil learning may not be necessary. This study was limited, however, to 12 weeks of kindergarten reading instruction in a white, lower-middle class area. Longer parent participation programs in other subject areas at other grade levels with different populations may find treatment variables such as parent accountability both necessary and effective.

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APPENDICES

APPENDIX A

RESPONSES TO PARENT QUESTIONNAIRE

RESPONSES FROM 64 OF THE 72 PARENTS IN THE PARTICIPATION PROGRAM

Parent Participation Program

May 8, 1969

PARENT QUESTIONNAIRE

The Parent Participation Program has been in operation since February. It is very important that we now gather information that will help us to improve the program for future use. Would you please complete this brief questionnaire and have your child return it to the kindergarten teacher as soon as possible. Thank you.

1. When have most of the Practice Exercise sessions taken place?

15 (20%) a. morning

22 (29%) b. afternoon

39 (51%) c. evening

2. To what extent has it been difficult to schedule time during the day or evening for your child to complete a Practice Exercise?

4 (7%) a. quite difficult

20 (33%) b. moderately difficult

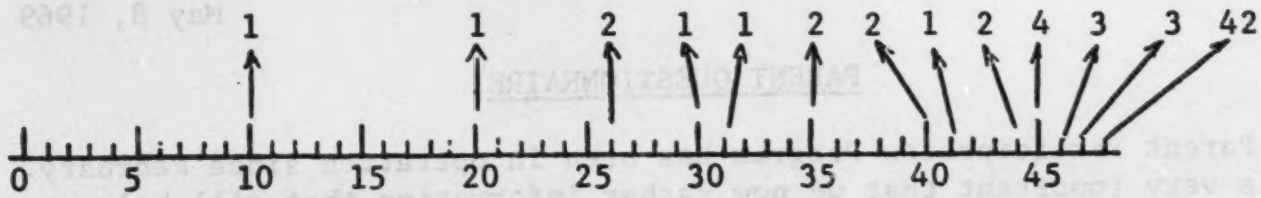
36 (60%) c. not difficult

3. Please indicate what proportion of the Practice Exercise sessions are conducted by each of the persons listed below:

a. Mother	**29 all**	**28 most**	**6 some**	**__ none**
b. Father	**1 all**	**5 most**	**25 some**	**__ none**
c. Other older person	**__ all**	**__ most**	**13 some**	**__ none**

(Specify: _____)

4. Over the past 12 school weeks (through May 2) you have received 48 Practice Exercises (four each week). Please estimate, by drawing a circle on the scale below, how many of these 48 Practice Exercises have actually been completed with your child.



5. Compared to earlier in the year (that is, before Practice Exercises started coming home in February) how frequently does your child now read aloud to an older person from one of the SWRL storybooks?

16 (25%) a. more frequently

36 (56%) b. about the same

12 (19%) c. less frequently

6. The two-hour Orientation Session at the school last January was:

42 (67%) a. very helpful

19 (31%) b. helpful

1 (2%) c. not very helpful

0 _____ d. not at all helpful

7. How frequently do you use the Record Cards during Practice Exercise sessions?

62 (97%) a. everytime

2 (3%) b. most of the time

0 _____ c. some of the time

0 _____ d. not at all

8. How frequently do you establish a Follow-up Activity which is dependent upon good or improved performance during Trial 2 of a Practice Exercise session.

19 (30%) a. every time

13 (20%) b. most of the time

22 (34%) c. some of the time

10 (16%) d. never

Please list any Follow-up Activities which you found effective:

9. You have been participating in this program for over 12 weeks now. Please indicate the extent to which you think you could maintain participation over an entire school year (30-36 weeks):

43 (67%) a. definitely could maintain participation all year

19 (30%) b. probably could maintain participation all year

1 (1.5%) c. probably could not maintain participation all year

1 (1.5%) d. definitely could not maintain participation all year

10. What is your overall reaction to the Parent Participation Program?

50 (80%) a. very positive

11 (17%) b. somewhat positive

2 (3%) c. neutral

0 _____ d. somewhat negative

0 _____ e. very negative

11. **Your experiences can be helpful in revising the Parent Participation Program for future use. What changes should be made in the program? Which aspects, if any, of the program seem especially valuable and should be left unchanged?**

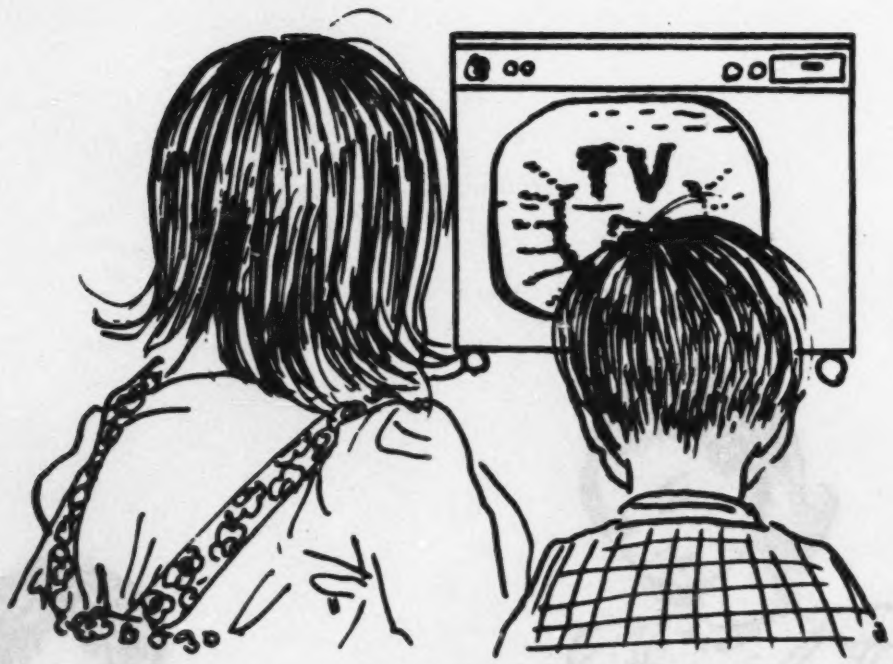
12. **We would very much like to have your further comments, criticisms, and suggestions regarding the Parent Participation Program.**

APPENDIX B

THE FIVE SKETCHES USED IN THE ACTIVITY PREFERENCE FORM (APF)

(Teacher-Storybook)

(Parent-Practice Exercise)



(Watching Television)

(Teacher-Number Flashcard)

(Parent-Storybook)